

Claims

1. A mechanically operable electrical device, comprising a transmitter electrode, a receiver electrode and a moveable conductive element, wherein:

said device is configured such that said conductive element is moveable to a first position remote from said electrodes such that said transmitter electrode is capacitance coupled to said receiver electrode; and

said conductive element is moveable to a second position closer to said electrodes such that said capacitance coupling is reduced.

2. A mechanically operable electrical device according to claim 1, wherein said device comprises a ground electrode which is grounded in use to electromagnetically shield said receiving electrode.

3. A mechanically operable electrical device according to claim 1 or claim 2, wherein said conductive element is continuously grounded during use.

4. A mechanically operable electrical device according to any of claims 1 to 3, wherein said transmitter electrode and said receiver electrode are located in the same plane.

5. A mechanically operable electrical device according to claim 1 or claim 2, wherein said conductive element is not electrically connected.

6. A mechanically operable electrical device according to any of claims 1 to 3 or claim 5, wherein said receiving electrode is positioned on a separate parallel plane to said transmitting electrode.

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7. A mechanically operable electrical device according to any of claims 1 to 3 or claim 5 or 6, wherein said conductive element in said second position is located between said transmitter electrode and said receiver electrode.

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8. A mechanically operable electrical device according to any of claims 1 to 7 wherein said transmitter electrode is formed on a printed circuit board.

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9. A mechanically operable electrical device according to claim 8, wherein said printed circuit board is a membrane which forms part of a position sensing device.

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10. A mechanically operable electrical device according to any of claims 1 to 9, wherein said transmitter electrode and receiver electrode are one of a plurality of such pairs of transmitter electrodes and corresponding receiver electrodes; said conductive element is one of a number of conductive elements located on a portable object to define an identifying code; and said portable object is configured to be manually inserted between said transmitter electrodes and said receiver electrodes, whereby the capacitance coupling between each transmitting electrode and the

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corresponding receiver electrode depends upon the presence of a conductive element on said portable object.

5 **11.** A mechanically operable electrical device according to any of claims **1** to **4**, wherein said device is configured as a manually operable switch.

12. A mechanically operable electrical device according to claim **11**, wherein said device further comprises one or more additional pairs of
10 transmitter electrodes and receiver electrodes, and said conductive element is moveable by rotation to other positions in which it is closer to one of said pairs of electrodes.

13. Code reading apparatus, and a coded object having one or
15 more conductive regions at defined locations to define a code, wherein said device comprises:

 a plurality of capacitor devices each having a transmitter electrode and a capacitance coupled receiver electrode;

 a signal generating device configured to supply a signal of a
20 predetermined type to each said transmitter electrode; and

 a signal analysing means for analysing a received signal received by said receiving electrodes,

 wherein said code reading device is configured to receive said one or more conductive regions of said coded object such that the capacitance
25 coupling between the electrodes of one or more corresponding capacitor devices is modified, whereby the signal received at one or more

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corresponding receiving electrodes is modified.

14. Code reading apparatus according to claim 13, wherein said coded object is a card.

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15. Code reading apparatus according to claim 13 or claim 14, wherein said code reading apparatus is a toy and said coded object is one of a plurality of coded cards, each card being individually identified by conductive regions defining a code.

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16. Code reading apparatus according to claim 15, wherein said card has images on each of its faces, and said apparatus is configured to identify the displayed face from said code.

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17. Code reading apparatus according to claim 13 or claim 14, wherein said code reading apparatus forms part of security apparatus.

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18. A mechanically operable electrical device, comprising a transmitter electrode; a receiver electrode capacitance coupled to said transmitter electrode; a conductive element adjacent to said transmitter electrode and said receiver electrode; and a ground electrode, wherein

said ground electrode is moveable between:

(a) a first position in which said conductive element is not electrically grounded such that capacitance coupling between said transmitter electrode and said receiver electrode is relatively high; and

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(b) a second position in which said conductive element is electrically grounded whereby said capacitance coupling is reduced.

19. A document interpreting system comprising location detecting means under which may be placed one or more documents and for detecting the location of pointing means directed at an area of a topmost document of the one or more documents, speech storage means for storing speech relating to different areas of said one or more documents, and speech reproduction means for reproducing speech stored in said speech storage means corresponding to the area of said topmost document to which said pointing means is directed, wherein said pointing means comprises electronic pointing means coupled to said document interpreting system and adapted in use to be directed at an arbitrary area of said topmost document, said location detecting means being arranged to detect electronically the location of said arbitrary area for causing speech stored in said speech storage means corresponding to the arbitrary area of said topmost document to which said pointing means is directed to be reproduced, wherein said location detecting means comprises a transparent or translucent membrane through which the electronic pointing means is directed at the arbitrary area of said topmost document.

20. A document interpreting system as claimed in claim 19, wherein the membrane comprises co-ordinate detecting means for affording an output corresponding to the co-ordinate location of said electronic pointing means on said topmost document.

21. A document interpreting system as claimed in claim **20**, wherein said co-ordinate detecting means comprises a network of conductive strands embedded in or in contact with said membrane.

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22. A document interpreting system as claimed in claim **21**, wherein said conductive strands comprise of a conductive coating on said membrane.

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23. A document interpreting system as claimed in any preceding claim wherein said electronic pointing means is coupled magnetically to said membrane.

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24. A document interpreting system as claimed in any of claims **19** to **22**, wherein said electronic pointing means is coupled capacitively to said membrane.

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25. A document interpreting system as claimed in any preceding claim, wherein said membrane is flexible.

26. A document interpreting system as claimed in any of claims **19** to **25**, wherein said membrane is substantially rigid.

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27. A document interpreting system as claimed in any preceding claim, wherein said membrane is held in a frame.

28. A document interpreting system as claimed in any preceding claim, wherein said speech storage means comprises an abdication specific integrated circuit (ASIC) and said speech reproduction means comprises a speaker.

29. A document interpreting system as claimed in claim 28, wherein said ASIC comprises a random access memory (RAM) for storing speech signals corresponding to areas of said one or more documents, a micro-processor which operates under the control of a program stored in a read only memory (ROM) to decode signals received from the membrane indicative of the location of said arbitrary area and to instruct said random access memory to output one or more of said speech signals corresponding to said arbitrary area to said speaker, via an input/output interface to cause said one or more speech signals to be reproduced by the speaker.

30. A document interpreting system as claim in any preceding claim, wherein said one ore more documents are received in use in a housing for maintaining said documents in a stack with one of said documents topmost so as to be visible through said membrane.

31. A document interpreting system as claimed in claim 30, wherein said housing comprises means for shuffling said one or more documents so as to change the identity of said topmost document.

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32. A document interpreting system as claimed in any preceding claim, wherein said documents are individual cards.

33. A document interpreting system as claimed in any preceding
5 claim, wherein said one or more documents comprise an elongate sheet
wound onto one or more rollers.